



# Principles of river and stream improvement for wildlife

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WB, Statewide

There are many potential benefits to landholders and wildlife from adopting a more environmental approach to the management of river and stream frontages (see reverse for examples). The simple four step process described here may be suitable for watercourses on your property. Steps 2 & 3 must be carried out simultaneously. This process may not be sufficient in cases of extreme erosion. More information can be obtained from Regional offices of the Department of Conservation and Environment.

including any new seedlings. Short periods of light grazing may be acceptable. Leave access to the stream for tankers in case of fire. You might pipe water to a trough for animals or leave one access point unfenced.

The recommended width of a stream buffer is 20 metres although smaller widths may also be satisfactory.<sup>1</sup>

## Encourage natural regeneration or plant local natives

Vegetation will bind the soil, thus helping to prevent or arrest erosion. Natural riverside vegetation from your district is adapted to the local soils, the local climate and is resistant to most local pests and diseases. It is the most appropriate for local wildlife.

Ground covers are equally important as larger shrubs and trees in controlling erosion and providing habitat for wildlife. So you should revegetate with a diverse range of native plants from local rivers and streams. A species list may be available for your area from the Department of Conservation and Environment. It may be best not to remove introduced species, such as willows, until the native vegetation is well established. Careful observation of the local natural riverside vegetation is a useful introduction to planning revegetation works and is highly recommended.

Natural regeneration is the preferred method to use initially where there is an available seed source. It may occur without assistance following fencing. If no natural regeneration occurs within one or two years, soil compaction or competition from weeds may be the cause. Note that eucalypts may not flower and set seed every year. Light scarification and/or mulching (beware of encouraging weeds and erosion) or a controlled light burn may solve these problems. These techniques should be timed to precede native seed fall (for many species this occurs in summer). They should firstly be applied to select areas, representative of the area under management, to see if they are appropriate before using over wider areas. A controlled burn must be conducted in accordance with fire regulations. Do not burn areas that would not burn



*Streams can be beautiful places. They carry one of our most important resources. (Photo F. Nicholls)*

## Fence to exclude stock

Fencing is necessary to avoid soil disturbance caused by trampling and to prevent stock from eating the vegetation,

naturally. The local CFA or DCE may be able to assist. Warm autumn or spring rains will provide the stimulus for germination. A controlled burn will assist with the germination of hard-seeded natives such as wattles (the fire cracks the seed coat allowing water to enter for germination) and help reduce competition from other plants.

If natural regeneration is not an option, direct seeding or plantings of seedlings grown from local native seeds, appropriate for the location and soil type, is the second best option.

## Control pest animals and plants

It may be necessary to plan for the use of alternative pest management strategies in the area under revegetation to that of an open paddock. Pressure fumigation, 1080 bait trails and other techniques can be used to control pest animals in these areas, where necessary. There are a range of techniques, compatible with conserving environmental quality, that are available for weed control. Consider environmental effects before using any chemical method. Chemicals may kill microscopic soil flora and fauna, thereby reducing soil quality, with subsequent effects on above-ground vegetation. Contact your local DCE office for specific advice (the equipment may also be available for hire). Pest animals, such as rabbits, can prevent successful regeneration by eating seedlings or stripping bark. Individual plant guards may be required, in conjunction with a rabbit control program, where this is a significant problem. Insects may also require control. Foxes are very skilled at catching native wildlife and are known to take Platypus. An on-going program to reduce pest animals and plants should be developed, preferably in conjunction with neighbouring landholders. Local Land Care groups may be able to offer additional support and advice on this aspect of management.

## Leave ground litter and river snags

Ground litter reduces the impact of rainfall, hence helping to prevent and control erosion. It provides nourishment for the soil which in turn supports a range of plant species. Ground litter also provides important wildlife habitat. Snags in streams are very important to fish as a refuge. Some species, such as the River Blackfish and Murray Cod deposit their eggs in hollow submerged branches. The riverside vegetation will drop litter into the stream thus providing a source of food for many small stream animals and ultimately larger consumers like the Platypus. If there is a weir in the stream or other barrier, ensure that it has a "fish ladder" to allow migrating species access to feeding and breeding areas upstream. Rocks and logs provide moist sites for germination of seedlings, thereby contributing to the on-going maintenance of the habitat.

Remember that expert local advice on all of the above is available from Regional Offices of the Department of Conservation and Environment.

## Financial assistance

Financial assistance is available for Stream Erosion Control and Revegetation. Contact the Rural Water Commission of Victoria, 590 Orrong Road, Armadale, 3143 or your local Department of Conservation and Environment office for details.

## References

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## Further reading

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Land Conservation Council, Victoria, (1989) *Rivers and Streams Special Investigation Report*, LCC.

*How to collect native tree seed easily*, Greening Australia booklet.

*Farm birds: Nature's pest controllers*. Greening Australia booklet.

*Treegrowing Notes, Pest plant Notes*; Department of Conservation and Environment, Victoria.

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